URBAN PROPERTY GROUP

BCA ASSESSMENT REPORT

16-20 Old Castle Hill Road, Castle Hill

Project number: 250287
Revision: BCA 2.0
Date: 17 December 2025

JENSEN HUGHES

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Quality management

<table>
<tr><th>Revision</th><th>Date</th><th>Revision description</th></tr>
<tr><td>BCA 2.0</td><td>10 December 2025</td><td>BCA Assessment Report – SSDA DRAFT</td></tr>
<tr><td rowspan="3">BCA 2.0</td><td rowspan="3">17 December 2025</td><td colspan="2">BCA Assessment Report – SSDA</td></tr>
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Table of contents

Executive summary

This document provides an assessment of the architectural design drawings for the proposed residential development at 16-20 Old Castle Hill Road, Castle Hill against the Deemed-to-Satisfy Provisions of the Building Code of Australia (BCA) 2022 Amendment 2 Volume One.

Part 4 of this report outlines the identified BCA compliance issues that require further information or consideration and/or assessment as Performance Solutions. Any Performance Solution will need to be detailed in a separate report and must clearly indicate methodologies for achieving compliance with the relevant BCA Performance Requirements.

Item	Description	BCA Provision
Performance Solutions required		
1.	Rationalise the basement levels to maintain 2 hour FRLs in lieu of compliance with clause S5C3 which requires loadbearing elements which provide direct vertical support within the same fire compartment on lower levels to have the same FRL of 240 mins for structural adequacy.	C2D2, S5C11 & S5C3
2.	Permit the fire rated shafts serving the garbage chutes to discharge direct into the Ground Floor waste room in lieu of providing a fire rated bottom to the shaft	S5C8
3.	Permit the public corridors on Level 1 to Level 29 to exceed 40m in length in lieu of providing a smoke wall/door	C3D15
4.	Mezzanine Level: Permit up to 22m to a point of choice in lieu of 20m within the storage cage room. Level 30 communal open space: Permit up to 30m to a point of choice to alternative exits in lieu of 20m.	D2D5
5.	Level 1-39: Permit the scissor stairs have 4.5m between alternative exits in lieu of the required minimum of 9m.	D2D6
6.	Ground Floor: Permit the northern fire stairs discharge into a covered area which is not open for 1/3 of its perimeter.	D2D12
7.	Permit the egress from the fire stairs on Level 1 to the road to pass within 6m of the external walls and openings without protection.	D2D12
8.	Permit the residential scissor stairs to discharge together at ground level in lieu of being as far apart as practical.	D2D15(4)
9.	Omit the provision of zone pressurisation system to the Class 6 & 7b portions of the building on Ground Floor and Mezzanine Level	E2D6
Building Code of Australia compliance matters to be addressed		
10.	For the Ground and Level 1 fire stair arrangements whereby the basement (rising) fire stairs can combine with the tower (descending) fire stairs, smoke separating construction between the stairs is to be provided before sharing the final fire corridor to the point of discharge. Provide a smoke door to separate the rising and descending fire stairs prior to them sharing the final fire corridor to the point of discharge in each arrangement.	D3D5
11.	As the building has a floor area greater than 500m2, fire hydrant protection is required in accordance with AS 2419.1:2021. The plans do not show the location	E1D2

Item	Description	BCA Provision
	of the hydrant booster or the pump room. Further design development is required to show the hydrant infrastructure for DA stage.	
12.	As the development is over fifty (50) metres effective height, it is required to have a Fire Control Room (FCR) in accordance with Clause E1D15 and Specification 19. No information has been provided and further design input is required to show the location of the Fire Control Room.	E1D15 & Spec 19
13.	Confirm how the provision of stair pressurisation relief is provided to the public corridors on Ground Floor and Mezzanine level.	E2D4

1.0 Basis of assessment

1.1 Location and description

The building development, the subject of this report, is located at 16-20 Old Castle Hill Road, Castle Hill. The development consists of the following:

- Six basement levels of car parking
- Ground Floor has residential lobby entry, two residential units, vehicular entry from Garthowen Crescent, waste holding rooms and loading dock, and one retail tenancy.
- Mezzanine Level has residential storage cages and plant areas.
- Level 1 has residential units and a communal room for residents which leads to an outdoor communal space for residents. The communal outdoor space has direct egress to McMullen Avenue.
- Level 2-39 contain residential units.
- Level 30 has part of the storey as communal room and outdoor communal space with swimming pool.

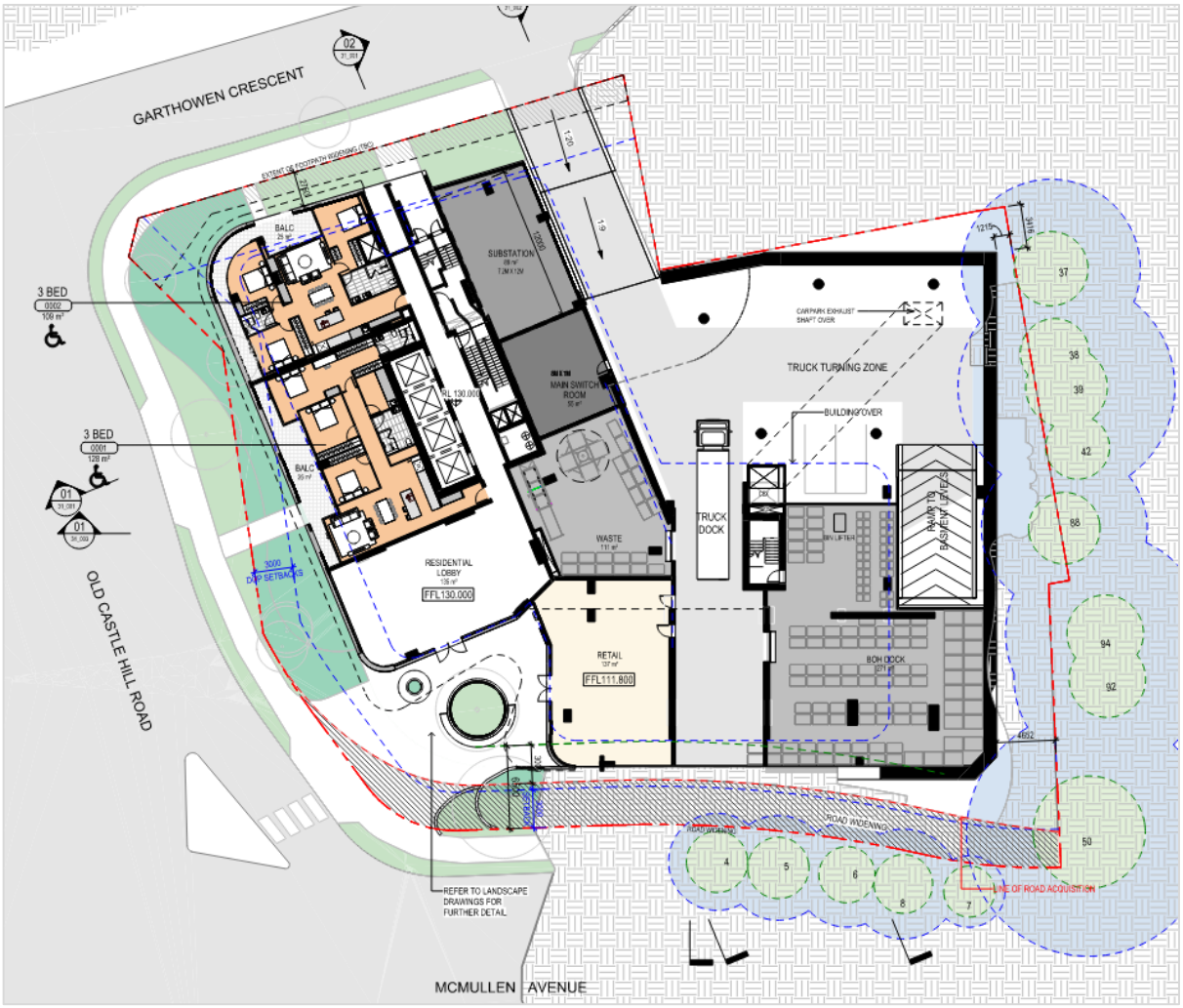

Figure 1: Ground Floor Plan: Residential lobby, residential units and retail tenancy facing Old Castle Hill Road and McMullen Avenue. Vehicular entry from Garthowen Crescent.

1.2 Purpose

The purpose of this report is to assess the current design proposal against the Deemed-to-Satisfy Provisions of the BCA, and to clearly outline those areas (if any) where compliance is not achieved, where areas may warrant redesign to achieve strict BCA compliance or where areas may be able to be assessed against the relevant performance criteria of the BCA. Such assessment against relevant performance criteria will need to be addressed by means of a separate Fire Engineering Report (FER) for fire safety matters, and Performance Solution Report for non-fire-safety matters; such reports are to be prepared under separate cover.

1.3 Building Code of Australia

This report is based on the Deemed-to-Satisfy Provisions of the National Construction Code (**NCC**) Series Volume One – Building Code of Australia, 2022 Edition (BCA) Amendment 2, incorporating the State variations where applicable.

Please note that the version of the BCA applicable to new building works is the version applicable at the time of the lodgement of the Construction Certificate application to the Accredited Certifying Authority, or for Crown projects the date of the invitation for tenders to carry out the Crown building work, or in the absence of tenders the date on which the Crown building work commences.

A reference to the BCA in this report is a reference to **BCA2022** Amendment 2, being volume 1 of the NCC.

1.4 Limitations

This report does not include nor imply any detailed assessment for design, compliance or upgrading for:

1. the structural adequacy or design of the building;
2. the inherent derived fire-resistance ratings of any proposed structural elements of the building (unless specifically referred to); and
3. the design basis and/or operating capabilities of any proposed electrical, mechanical or hydraulic services.

This report does not include, or imply compliance with:

1. the National Construction Code – Plumbing Code of Australia Volume 3
2. the Disability Discrimination Act 1992 including the Disability ((Access to Premises – Buildings) Standards 2010 – unless specifically referred to). (Note: The provision of access for people with a disability for the subject development has not been assessed against the Deemed-to-Satisfy Provisions of Part D4 and Clauses E3D7, E3D8, F4D5, F4D6, F4D7 and F4D12 of BCA2022 Amendment 2).
3. Section J of BCA2022;
4. Demolition Standards not referred to by the BCA;
5. Work Health and Safety Act 2011;
6. Requirements of Australian Standards unless specifically referred to;
7. Requirements of other Regulatory Authorities including, but not limited to, Telstra, Telecommunications Supply Authority, Water Supply Authority, Electricity Supply Authority, Work Cover, Roads and Maritime Services (RMS), Local Council, ARTC, Department of Planning and the like; and
8. Conditions of Development Consent issued by the Local Consent Authority.

1.5 Design documentation

This report has been based on the Design plans and Specifications listed in Appendix A of this Report.

2.0 Building description

For the purposes of the Building Code of Australia (BCA) the development may be described as follows.

2.1 Rise in storeys (clause C2D3)

The building has a rise in storeys of 41. Taken from Ground Floor, Mezzanine and Level 1-39. Level 40 roof plant is not counted in the rise in storeys.

2.2 Classification (Clause A6G1)

The building has been classified as follows:

+ Basement Level 01-06: The total floor area of the residential storage cages is calculated at less than 10% of the floor area of the respective storey. As such, each storey is classified Class 7a.

Table 1 Building Classification(s)

Class	Level	Description
Class 7a	Basement Level 01-06	Car parking
Class 7b	Part Ground Floor & Mezzanine	Loading dock and waste holding rooms and mezzanine level storage areas
Class 6	Part Ground Floor	Retail Tenancy
Class 2	Part Ground Floor	Ground Floor Lobby and SOUs
Class 2	Level 1 to Level 39	Residential SOUs and communal areas

2.3 Effective height (clause A1G4)

The building has an *effective height* of more than twenty-five (25) metres and more than fifty (50) metres.

Effective Height: Level 39 RL 255.10 – Ground Floor RL 130.00 = 125.10m

2.4 Type of construction required (table C2D2)

The building is required to be of type A Construction.

2.5 Floor area and volume limitations (tableC3D3)

The building is subject to maximum floor area and volume limits of: -

Class 6, 7b	Maximum Floor Area	5,000m^2
	Maximum Volume	30,000m^3
Class 7a	The carpark is to be provided with a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17 and as such there are no maximum floor area or volume limitations for this area.	

Class 2	The Class 2 portions of the building are not subject to floor area and volume limitations of C3D3 as Specifications 5 and Clause C4D12 of the BCA regulate the compartmentation and separation provisions applicable to buildings, or building portions, of Class 2 buildings.

2.6 Fire compartments

The following fire compartments have been assumed:

1. Basement Level 01-06 and the loading dock are one fire compartment connected by internal vehicular ramps. This includes the waste holding rooms on Ground Floor and the storage rooms on Mezzanine level being part of the same fire compartment.
2. Ground Floor retail tenancy is a separate fire compartment. Fire wall separation is also required at Mezzanine Level for the double height retail tenancy.
3. Ground Floor residential lobby and residential SOUs form a separate fire compartment. Fire wall separation is also required at Mezzanine Level for the double height spaces.
4. Level 1 to Level 39: Each residential storey is a separate fire compartment.

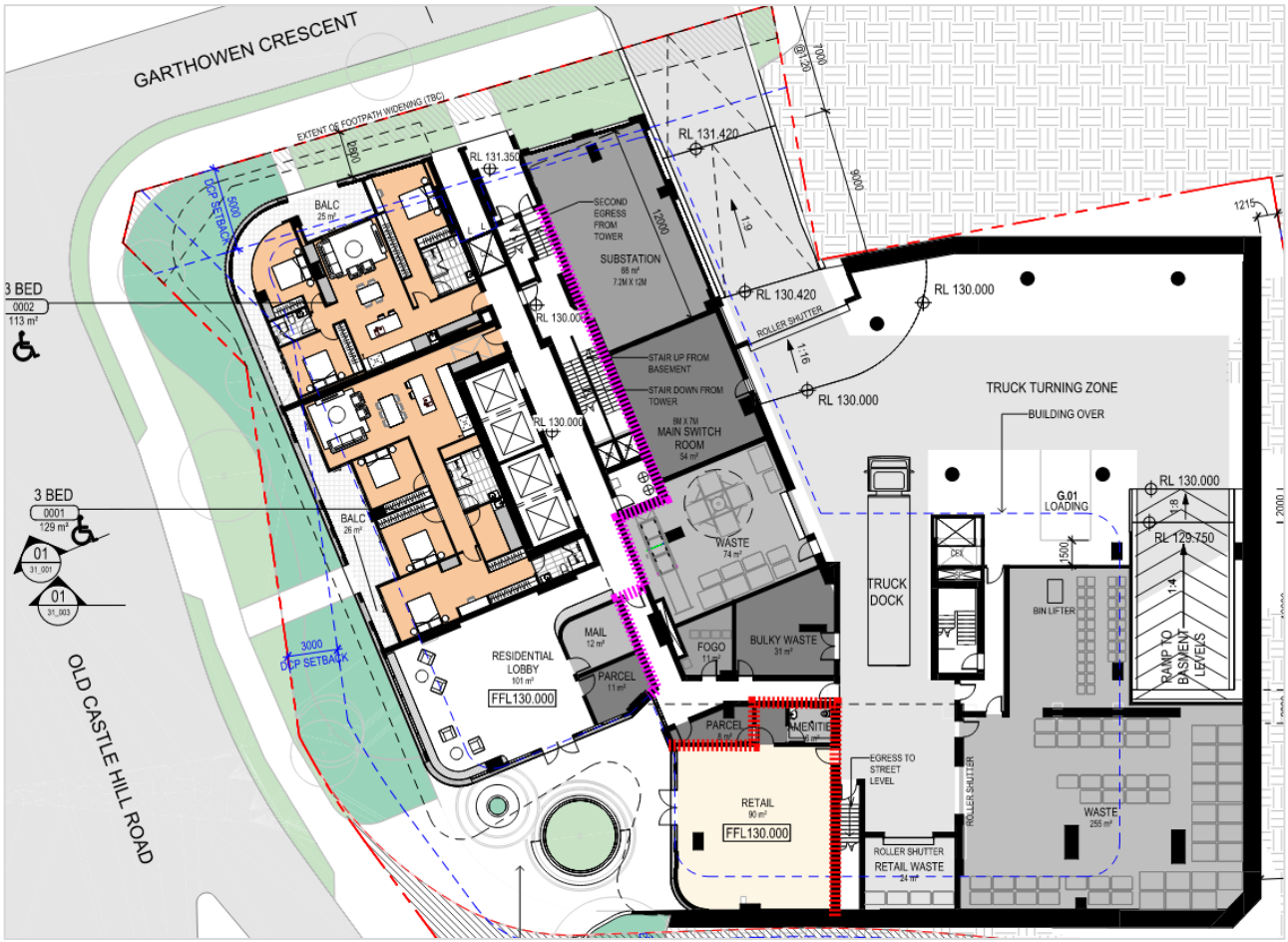

Figure 2: Ground Floor Fire Compartments show the fire walls to provide residential, retail tenancy and loading dock / car park fire compartment.

2.7 Exits

The following points in the building have been considered as the exits:

1. Basement Level 01-06 has two fire-isolated stairs.
2. Ground Floor retail tenancy is permitted to have one exit (retail doors) to open space.
3. Ground Floor residential lobby and SOUs: Exit door into fire-isolated exit and lobby door to open space.
4. Ground Floor loading dock: Exit door into fire-isolated stair and non-fire isolated stair up to street level.
5. Mezzanine level has three fire-isolated stairs.
6. Level 1 SOUs and communal room have access to three fire-isolated stairs/ exits and one of the double doors to outdoor area which leads down to McMullen Avenue.
7. Level 1 outdoor communal area is not considered an 'occupiable outdoor area' as it can egress via roof as open space direct to McMullen Avenue. As such, it is not required to be provided with two exits or measure travel distance to an exit.
8. Level 2 to Level 29 has three fire-isolated stairs.
9. Level 30 to Level 39 has two fire-isolated stairs.
10. Level 40 rooftop plant has two fire-isolated stairs.

2.8 Climate zone

The building is located within Climate Zone 6.

2.9 Building importance level

Certain Australian Standards (particularly structural standards) require the Importance Level of the building to be determined. The importance level relates to the individual actions on a building listed in Clause B1D3 of the BCA. Due to the height of the building it is considered Importance Level 3 may be the most appropriate assessment. Subject to confirmation with the client and design team.

Table B1D3a of the BCA provides the following:

Importance Level	Building Types	Jensen Hughes Interpretation and Examples
1	Buildings or structures presenting a low degree of hazard to life and other property in the case of failure.	1 and 2 storey factory buildings
2	Buildings or structures not included in Importance Level 1, 3 and 4.	Residential apartment buildings and associated carparking. Office buildings
3	Buildings or Structures that are designed to contain a large number of people.	Stadia, Entertainment venues, shopping centres. Transport facilities
4	Buildings or Structures that are essential to post-disaster recovery or associated with hazardous facilities.	Data centres, evacuation centres

The Guide to the BCA provides a generic description of building types which have Importance Levels assigned. The Guide states that the "Importance Level" concept is applicable to building structural safety

only. Specific examples from the Guide are provided below. The examples provided by the Guide are not exhaustive of all building types.

Importance Level 2:

- Low rise residential construction.
- Buildings and facilities below the limits set for Importance Level 3.

Importance Level 3:

- Buildings and facilities where more than 300 people can congregate in one area.

2.10 Location of fire-source features

The fire source features for the subject development are:

North: The far boundary of Garthowen Crescent.

South: The far boundary of McMullen Avenue.

East: The allotment boundary.

West: The far boundary of Old Castle Hill Road.

In accordance with Clause S5C2 of Specification 5, a part of a building element is exposed to a *fire-source feature* if any of the horizontal straight lines between that part and the fire-source feature, or vertical projection of the feature, is not obstructed by another part of the building that–

a. has an FRL of not less than 30/–/–; and

b. is neither transparent nor translucent.

3.0 BCA assessment

3.1 Introduction

The assessment undertaken is in relation to the plans prepared for the development consent application. The technical details required for a development consent are far less than that required for a construction certificate and as such, this assessment is designed to address a higher-level assessment of the building against the provisions of the BCA.

The main purpose of this report is to identify any major design changes required to the building, services required to be installed, and the fundamentals of design required by sections C, D, E, F, G and H (where applicable) of the BCA. This report does not address the design requirements for the structure of the building (Section B), or for the detailed design of services (Section E) and is subject to the limitations outlined under Section 1.4 of this report.

The summary below is to be read in conjunction with the BCA specification contained in Appendix E of the report.

3.2 Relationship to the Design and Building Practitioners Act

The Design and Building Practitioners Act requires certain specified design to be certified by a Registered Practitioner and the issuing of a Design Compliance Declaration (DCD). The declared designs include:

- Structure
- Building Enclosure (e.g. Façade);
- Fire Safety Systems (e.g. services, egress and FRLs)
- Waterproofing
- Fire Safety performance solutions

This report contains an assessment of the plans and specifications available, which are not sufficient in detail to allow any DCD to be issued by others. This report is not to be construed as, or used to support to a DCD at Construction Certificate Stage as it is based on development application drawings only.

3.3 Fire resistance and stability – Part C2 & Specification 5

The required fire resistance levels for the building elements shall be in accordance with Part C and Specification 5 of the BCA and are outlined in Appendix C of this report.

The external walls and all components of the wall, in a building of Type A construction, are required to be non-combustible. Full details have not been provided with respect to the materials of the external wall and further details will be required to be submitted at Construction Certificate Stage for assessment.

Performance Solution is required to rationalise the FRLs of the car park and loading dock fire compartment. The Ground Floor loading dock and waste rooms and Mezzanine level storage rooms are required to have 4 hour FRLs for Class 7b. The car park levels on Basement Level 01-06 require 2 hour FRLs. As the basement levels and loading dock are connected via the internal vehicular ramps they create one single fire compartment. Rationalise the basement levels to maintain 2 hour FRLS in lieu of compliance with clause S5C3 which requires loadbearing elements which provide direct vertical support within the same fire compartment on lower levels to have the same FRL of 240 mins for structural adequacy.

Internal linings and materials are required to meet the specified fire hazard properties of BCA Clause C2D11 and Specification 7.

Performance Solution is required to permit the fire rated shafts serving the garbage chutes to discharge direct into the Ground Floor waste room in lieu of providing a fire rated bottom to the shaft.

Subject to the required FRL's being provided, the proposed building is capable of complying with the requirements of the BCA with respect to fire resistance.

3.4 Compartmentation and separation – Part C3

Under the provisions of BCA Clause C3D3, the residential portion of the building is not the subject to any floor area and volume limitations.

The Class 6 & 7b portions of the building have been assessed and the floor area and volume of these compartments is less than that permitted by BCA Clause C3D3. As such compliance with the provisions of the BCA for compartmentation is readily achieved, however this assessment is to be reaffirmed at Construction Certificate stage once holistic fire compartment drawings are available for assessment.

The whole building including the carpark is required to have an AS2118.1 sprinkler system as it is a building over 25m effective height. Therefore, the carpark is not subject to the floor area and volume limitations under BCA Clause C3D3.

A development which is Type A Construction may be required to have spandrel separation between openings in an external wall. However, the building is protected with an AS2118.1 sprinkler system, therefore fire rated spandrel panels are not required under the provisions of BCA Clause C3D7.

Separation of classifications in the same storey and separation by fire walls shall be achieved on the Ground Floor in accordance with BCA Clause C3D8, C3D9 & C3D10. Refer to Part 2.6 Fire Compartments for the preliminary assessment of fire compartments. This assessment is to be reaffirmed at Construction Certificate stage once holistic fire compartment drawings are available for assessment.

The main switchboard is located on the Ground Floor of the building. As the switchboard is required to sustain emergency equipment operating in an emergency, the switch room is to have fire separation with an FRL of 120/120/120 and fire doors FRL -/120/30. The design of the switch room is such that compliance can be readily achieved.

As the building is over 25m effective height, the lift cores are required to have emergency lifts within fire rated shafts which have an FRL not less than 120/120/120 in accordance with BCA Clause C3D11.

It will be necessary to undertake a Fire Engineered Performance Solution to permit the public corridors on Level 1 to Level 29 to exceed 40m in length in lieu of providing a smoke wall/door as required under Clause C3D15.

The Mezzanine level is provided with a smoke wall & smoke door to provide corridor lengths less than 40m. The void to the residential lobby shall be provided with full height glazed wall at Mezzanine level to provide smoke separation between Ground Floor lobby and Mezzanine level corridors to remain less than 40m.

For Ground Floor and Level 30-39, the public corridor length for each respective storey is less than 40m.

Subject to the required FRL's being provided, the proposed building is capable of complying with Part C3 of the BCA.

3.5 Protection of Openings – Part C4

3.5.1 Openings in external walls

On Level 1 & above the external walls are located more than three (3) metres from any boundary. As such there is no requirement to protect any openings within the external walls.

The Ground Floor opening for the vehicular entry on the northern elevation is intended to be located 3m from the boundary and not require protection. The 3m separation to the boundary is to be confirmed at CC stage.

3.5.2 Separation of external walls and associated openings in different fire compartments

On the Ground Floor around the residential lobby and retail tenancy, the external walls and openings in different fire compartments will be protected in accordance with Clause C4D4 & C4D5. External walls shall have FRL not less than 60/60/60. Lobby and retail glazing shall be fixed closed and be protected with wall-wetting sprinklers as per C4D5. Fire rating and protection of openings is a design element that will require detailed assessment and specification at Construction Certificate stage.

3.5.3 Bounding construction

The walls between the Sole-Occupancy-Units (SOUs) and between the SOUs and corridor are internal walls that require an FRL. In addition, the walls to the lift and stairs require an FRL. As such, the doors to the sole occupancy units and fire stairs are required to be self-closing FRL --/60/30 fire doors in accordance with BCA Clause C4D12. The doors to the lift are required to have an FRL of -/60/- in accordance with BCA Clause C4D11.

Waste rooms, communal rooms and plant rooms on residential levels shall have internal walls between SOUs and public corridors which require an FRL as bounding construction. As such, the doors to the communal rooms from the public corridor are required to be self-closing FRL --/60/30 fire doors in accordance with BCA Clause C4D12.

On Ground Floor the residential lobby is part of the public corridor used for egress for the SOUs. As such, the Mail & Parcel rooms require internal walls to have FRL -/60/60 as bounding construction and the doors to be self-closing FRL --/60/30 fire doors in accordance with BCA Clause C4D12.

3.5.4 Openings to fire walls

The building design includes fire wall separation and will require fire doors or fire shutters to be provided to protect openings.

As such, the openings to fire walls are required to be protected with self-closing fire doors with FRL --/xx/30 in accordance with BCA Clause C4D6, where “xx” is the integrity rating required for the fire wall separating the differing Classifications each side of the fire wall.

3.5.5 Openings in floors for services and service installations

Where electrical, plumbing, mechanical or other services pass through an element of construction that is required to achieve a fire resistance level (FRL), the service installation shall not compromise the fire resistance level of the element. A such, the service installation must be fire sealed with a compliant system such as fire collar on PVC pipes or fire rated mastic on electrical cables tested in accordance with AS1530.4-2014. Fire sealing of services is a design element that will require detailed assessment and specification at Construction Certificate stage.

3.6 Occupant access and egress – Section D

3.6.1 Egress from the building

General Requirements

As the development is over twenty-five (25) metres effective height, each *storey* is required to have no less than two (2) exits. Concession applies for parts of the building on Ground Floor where a single exit is permitted subject to compliant travel distance to a single exit in accordance with D2D3(2)(b). The retail tenancy complies with less than 30m to a single exit direct to open space.

Level 1 outdoor communal area is not considered an 'occupiable outdoor area' as it can egress via roof as open space direct to McMullen Avenue. As such, it is not required to be provided with two exits or measure travel distance to an exit.

Where the egress discharges to open space on the property, a continuous pathway from the point of discharge to the street is required. The plans do indicate such a pathway and as such the provisions of BCA Clause D2D15 are readily satisfied.

Details of treads and risers, landings, thresholds, balustrades, and handrails have not been provided however compliance is readily achievable. The design of these elements can be assessed at the Construction Certificate Stage.

Electrical distribution cupboards are to be provided with smoke separation to satisfy the requirements of BCA Clause D3D8. The doors are to be lined internally with fire grade plasterboard or metal backing sheets and smoke seals provided to all four sides, including drop down seals on the bottom. All penetrations from the enclosure are to be suitably sealed against smoke spread by sealing with non-combustible mastic.

Basement Car Park/Class 6 & 7b parts

Egress from the carpark / loading dock / mezzanine level shall ensures that no point on the floor is more than twenty (20) metres from an exit, or where a point of choice of two (2) exits is available, the distance to the nearest of those exits can increase up to forty (40) metres, as permitted by BCA Clause D2D5. On the Ground Floor, a Class 5 or 6 building part is permitted to be thirty (30) metres to an exit. The distance between alternative exits is required by BCA Clauses D2D6 to be no closer than nine (9) metres and no further apart than sixty (60) metres when measured through the point of choice.

For the basement levels and mezzanine level, the travel distances and distances between exits generally comply with the above requirements however see below in relation to the extended travel to a point of choice on the mezzanine level. The retail tenancy complies with less than 30m to a single exit direct to open space.

Loading dock area and waste rooms have access to at least two alternative exits. Egress via the fire-isolated stair and egress via non-fire isolated stair up to street level, and egress via the lobby to the open space if required. Travel distances comply with the above requirements.

Residential Floors

As the building is over twenty-five (25) metres effective height the residential floors shall have travel distance for an SOU of no more than 6m to where a point of choice exists, and then the distance between alternative exits is no greater than forty-five (45) metres. The rooms which are not an SOU shall have no more than 20m to where a point of choice exists.

From Level 1 and above, the residential SOUs comply with less than 6m to a point of choice and the distance between alternative exits is no greater 45m. However, the scissor stairs are identified below as requiring a Performance Solution being less than 9m apart.

Level 1 communal room complies with less than 20m to a point of choice to alternative exits. Level 17 plant rooms comply with less than 20m to a point of choice to alternative exits.

The rooftop covered plant area can readily comply with less than 20m to a point of choice to alternative exits. The remainder of the open air plant areas are not required to have ravel distance assessment as it is not a storey, not being a covered plant area.

It will be necessary to undertake a Fire Engineered Performance Solution to permit the extended travel distances within the following locations:

+ BCA Clause D2D5 – Exit travel distance
  - Mezzanine Level: Permit up to 22m to a point of choice in lieu of 20m within the storage cage room.
  - Level 30 communal open space: Permit up to 30m to a point of choice to alternative exits in lieu of 20m.
+ BCA Clause D2D6 – Distance between alternative exits
  - Level 1-39: Permit the scissor stairs have 4.5m between alternative exits in lieu of the required minimum of 9m.

Fire-isolated exits

The building is over 25m effective height with all levels connected by a common stairway. Therefore, BCA Clause D2D4 requires the residential building to have fire-isolated stairs and the exits serving the six basement levels are required to be fire-isolated stairs.

The tower scissor stairs and northern basement fire stair shall discharge in accordance with Clause D3D5 of the BCA for rising and descending stairs. The basement (rising) fire stair can combine with one of the tower (descending) fire stairs with the required smoke separating construction between the stairs before sharing the final fire corridor to the point of discharge. The second tower (descending) fire stair requires its own discharge at ground level. A review of the plans shows that compliance is achieved. However, a Performance Solution will be required to permit the residential scissor stairs to discharge together at ground level in lieu of being as far apart as practical under Clause D2D15.

It will be necessary to undertake a Fire Engineered Performance Solution to permit the northern fire stairs discharge into a covered area which is not open for 1/3 of its perimeter.

For Level 1, the eastern tower fire stair and eastern basement fire stair shall discharge in accordance with Clause D3D5 of the BCA for rising and descending stairs. The basement (rising) fire stair can combine with the tower (descending) fire stair with the required smoke separating construction between the stairs before sharing the final fire corridor to the point of discharge. Provide a smoke door to separate the basement rising fire stair before sharing the final fire corridor to the point of discharge. Subject to further design development to clarify compliance.

The fire stairs on Level 1 discharge to open space with egress available to the south to reach the public road. It will be necessary to undertake a Fire Engineered Performance Solution to permit the egress from the fire stair to pass within 6m of the external walls and openings without protection.

Level 30 communal room has an airlock to serve the fire-isolated stair which is permitted under D2D12(1)(c).

3.6.2 Access for people with a disability

BCA Part D4 has not been assessed within this report. It is assumed a separate Access Consultant has been engaged.

3.7 Services and equipment- Parts E1, E2, E3 and E4

The building is required to be provided with the services and equipment set out in Appendix B of this report. The appendix also outlines the standard of performance to be achieved by the services and equipment.

3.7.1 Part E1 – Fire Fighting Equipment

Specific comments pertaining to fire fighting services and equipment required for the building as set out in Appendix B of this report are provided as follows:

Fire hydrant

As the building has a floor area greater than 500m^2, fire hydrant protection is required in accordance with AS 2419.1:2021. The plans do not show the location of the hydrant booster or the pump room. Further design development is required to show the hydrant infrastructure for DA stage.

Fire Hose Reel

The Class 6 & 7 portions of the building are required to have fire hose reels (FHR's). The FHRs are required to be located within four (4) metres of an *exit*, and ensure that coverage to all points on a floor are within thirty-six (36) metres, plus four (4) metres of spray as per AS2441-2005. Further design development is required from the Hydraulic Consultant at the Construction Certificate Stage to achieve compliance.

Sprinklers

The building is required to have a sprinkler system installed as per BCA Clause E1D4, E1D5 & Specification 17 and AS 2118.1:2017. Details are to be provided at the Construction Certificate Stage by the Fire Services Consultant to demonstrate compliance.

Portable Fire Extinguishers

The development is required to have portable fire extinguishers installed throughout in accordance with AS2444-2001. Compliance is readily achievable.

Fire Control Centre

As the development is over fifty (50) metres effective height, it is required to have a Fire Control Room (FCR) in accordance with Clause E1D15 and Specification 19. No information has been provided and further design input is required to show the location of the Fire Control Room.

3.7.2 Part E2 – Smoke Hazard Management

Specific comments pertaining to smoke hazard management system services and equipment required for the building as set out in Appendix B of this report are provided as follows:

Smoke Alarms

Smoke alarms will be required within residential sole occupancy units in accordance with Clause E2D5, Specification 20 & AS3786-2014.

Smoke Detection & Alarm System

The development must be provided with a smoke detection and alarm system complying with Clause E2D3, E2D5 & Specification 20 and AS 1670.1:2018 (Amdt 1). The preliminary Development Application plans do not provide any details regarding the layout of smoke detection and alarm system. Further information is needed from the Fire Services Consultant during the Construction Certificate Stage to demonstrate compliance.

Automatic Mechanical Shutdown

The ducted mechanical ventilation systems shall have automatic shutdown where necessary and comply with AS 1668.1:2015 (Amdt 1) in accordance with BCA Clause E2D3. No details have been provided, and further design development is necessary from the Mechanical Consultant.

Stair Pressurisation

As the development comprises fire stairs which serve storeys above twenty-five (25) metres effective height, and serve six levels of basement, it will be necessary to have a stair pressurisation system to all of these fire stairs. The drawings indicate that all fire stairs have stair pressurisation shafts as required. Further design development to show all shafts and lobby relief will need to be addressed for DA Stage.

Other

It will be necessary to undertake a Fire Engineered Performance Solution to omit the provision of zone pressurisation system to the Class 6 & 7b portions of the building on Ground Floor and Mezzanine Level.

3.7.3 Part E3 – Lift Installations

Lifts Serving More than 25 Metres Effective Height

Lifts are provided to the building and are located within their own shaft, serviced by a common lobby. The lifts require stretcher facilities as they serve a height above twelve (12) metres in *effective height* and the dimensions of the shaft are sufficient to allow compliance for a 1400 mm width x 2000 mm length lift car.

Where buildings exceed twenty-five (25) metres effective height, the building is required to have emergency lifts installed in accordance with Clause E3D5. As the four lifts serve all levels, the building will require two emergency lifts. Each emergency lift must be in a separate fire rated shaft, therefore a fire rated wall shall divide the lifts into two pairs. Each pair of lifts shall have one emergency lift so they are in separate fire rated shafts. Plans show compliance can be readily achieved.

It is recommended to get early advice form the Lift Consultant to confirm the lift pits are less than 3m deep to satisfy Clause D2D22(a) and have access to lift pits via the lowest landing doors.

3.7.4 Part E4 – Visibility in emergency, exit signs and warning systems.

Specific comments pertaining to emergency lighting, exit signs and warning systems required for the building as set out in Appendix B of this report are provided as follows:

- Emergency lighting is required as per BCA Clause E4D2 for all non-fire-isolated stairs, corridors, passageways, hallways, or the like that is part of a path of travel to an exit.
- Exit signs are required to be installed throughout the building, including directional exit signs to guide occupants to the designated exits in the building.
- Emergency warning and intercommunication system is required to be installed within buildings with an effective height greater than twenty five (25) metres.

The DA plans do not provide any details for the emergency lighting and exit signs. As such further information will be required at the Construction Certificate Stage, however compliance is readily achievable.

3.8 Facilities in buildings – Part F4

Clause F4D2 of the BCA requires the following facilities within a Class 2 building:

- Kitchen area & sink, including space for preparation & cooking of food;
- Bath or shower;
- Closet pan;
- Washbasin
- Laundry facilities

The plans indicate that each of these facilities are provided within each sole occupancy unit and therefore compliance is achieved with BCA Clause F4D2.

3.9 Facilities in class 3 to 9 buildings – Part F4

The retail tenancy on Ground Floor has one unisex accessible sanitary facility to cater for staff in accordance with Clause F4D3 & F4D4. This is considered satisfactory for DA stage assessment. If the future approved use of a retail tenancy requires sanitary facilities for patrons, these facilities will need to be provide by the retail tenant within their own tenancy.

3.10 Room heights – Part F5

The section drawings indicate that the ceiling heights for all habitable spaces, corridors, and the like can achieve the minimum height of 2400 mm. In non-habitable rooms such as toilets, garages and storage rooms, the ceiling height is no less than 2100 mm.

The ceiling heights have been assessed in accordance with BCA Part F5 which has indicated that compliance is readily achievable within all habitable spaces, corridors, and the like.

3.11 Light and ventilation – Part F6

Class 2 buildings

Natural light is required to all habitable rooms within a Class 2 building. The plans have been assessed which reveals all habitable spaces are served by windows or glazed doors. The area of the doors and windows (exclusive of any framing members, glazing bars or other obstructions) are likely to be sufficient in size to provide the required 10% natural light to all habitable rooms. However, window specification will be needed with design development to verify compliance.

Ventilation is required to all habitable rooms within a Class 2 building. Clause F6D6 allows for either natural ventilation as per Clause F6D7 or mechanical ventilation or air-conditioning system complying with AS1668.2.

The plans have been assessed which reveals all habitable spaces are served by windows or glazed doors. The area of the doors and windows (exclusive of any framing members, glazing bars or other obstructions) are likely to be sufficient in size to provide the required 5% natural ventilation to all habitable rooms. However, a window specification will be needed with design development to verify compliance if natural ventilation is relied upon.

Bathrooms and sanitary compartments will be provided with mechanical ventilation complying with AS1668.2. Level 01 & 30 communal rooms will be provided with mechanical ventilation complying with AS1668.2.

Class 6 & 7 buildings

For a Class 6 & 7b building, artificial lighting and mechanical ventilation are required, and these systems can be readily installed in the building. Further design development and input will be required from the Electrical and Mechanical Consultants at the Construction Certificate Stage.

Class 7a buildings

The carpark is required to have a mechanical ventilation system complying with Clause F6D11 & AS1668.2. In addition, the carpark mechanical ventilation system shall comply with Clause E2D12 and AS 1668.1:2015 (Amdt 1). Further design input will be required from the Mechanical Consultant to demonstrate compliance

3.12 Cleaning windows – NSW G1D5

A building must provide for a safe manner of cleaning any *windows* located three (3) or more storeys above ground level as per NSW Clause G1D5. Two (2) options are available for cleaning the windows:

1. The windows can be cleaned wholly from within the building; or
2. Provisions are made for cleaning windows by a method complying with the *Work Health and Safety Act 2011* and regulations made under the Act.

No information has been provided to determine if the development can comply with this requirement, and further information will be required during the design development stage.

3.13 Energy Efficiency - Section J

To be separately assessed by Energy Consultant.

4.0 Statement of compliance

The plans assessed were developed to a standard suitable for submission as a development application and do not contain all the details necessary information to allow a CC to be issued. As such, this assessment was limited to the major items of the BCA with the view of identifying any items that may result in a modified development consent being required, or additional key items that need to be included in the design.

The architectural design documentation as referred to in report has been assessed against the applicable provisions of the Building Code of Australia, (BCA) and it is considered that such documentation complies or is capable of complying with that Code, subject to all matters for further consideration identified in this report being addressed in the design, and subject to compliance with all appendices and Specifications included with this report.

Appendix A Design documentation

This report has been based on the following design documentation.

Table 2 Design documentation

Architectural Plans Prepared by Studio SC			
Drawing Number	**Revision**	**Date**	**Title**
AD-DA11_093	E	16.12.2025	GA PLAN - BASEMENT LEVEL 06
AD-DA11_094	E	16.12.2025	GA PLAN -BASEMENT LEVEL 05
AD-DA11_095	E	16.12.2025	GA PLAN -BASEMENT LEVEL 04
AD-DA11_096	E	16.12.2025	GA PLAN -BASEMENT LEVEL 03
AD-DA11_097	E	16.12.2025	GA PLAN -BASEMENT LEVEL 02
AD-DA11_098	E	16.12.2025	GA PLAN -BASEMENT LEVEL 01
AD-DA11_099	E	16.12.2025	GA PLAN - GROUND LEVEL
AD-DA11_100	E	16.12.2025	GA PLAN - MEZZANINE LEVEL
AD-DA11_101	E	16.12.2025	GA PLAN - LEVEL 01
AD-DA11_102	E	16.12.2025	GA PLAN - LEVEL 02
AD-DA11_103	E	16.12.2025	GA PLAN - LEVEL 03
AD-DA11_104	E	16.12.2025	GA PLAN - LEVEL 04
AD-DA11_105	E	16.12.2025	GA PLAN - LEVEL 05
AD-DA11_106	E	16.12.2025	GA PLAN - LEVELS 06-08
AD-DA11_109	E	16.12.2025	GA PLAN - LEVELS 09-16 & 18-28
AD-DA11_117	E	16.12.2025	GA PLAN - LEVEL 17
AD-DA11_129	E	16.12.2025	GA PLAN - LEVEL 29
AD-DA11_130	E	16.12.2025	GA PLAN - LEVEL 30
AD-DA11_131	E	16.12.2025	GA PLAN - LEVELS 31-37
AD-DA11_138	E	16.12.2025	GA PLAN - LEVEL 38-39
AD-DA11_140	E	16.12.2025	GA PLAN - ROOF LEVEL 40
AD-DA21_001	E	16.12.2025	ELEVATIONS - SHEET 01
AD-DA21_002	E	16.12.2025	ELEVATIONS - SHEET 02
AD-DA31_001	E	16.12.2025	SECTIONS - SHEET 01
AD-DA31_002	E	16.12.2025	SECTIONS - SHEET 02
AD-DA31_003	E	16.12.2025	SECTIONS - SHEET 03

Appendix B Essential Services

The following fire safety measures are required to be installed in the building. The following table will be required to be updated as the design develops and options for compliance are confirmed, including any omissions or additions as a result of the fire engineering processes.

Table 3 Essential fire safety measures

Item	Essential Fire and Other Safety Measures	Standard of Performance
Fire Resistance (Floors – Walls – Doors – Shafts)		
1.	Access Panels & doors/hoppers (fire rated)	**BCA2022 C4D14** (Openings in Shafts) **BCA2022 Specification 12** AS 1530.4:2014 & AS 1905.1:2015
2.	Construction Joints	**BCA2022 C2D2, Specification 5** **BCA2022 C4D16** AS 1530.4:2014 & AS 4072.1:2005
3.	Fire doors	**BCA2022 C3D13** (Separation of Equipment) **BCA2022 C3D14** (Electricity Supply Systems) **BCA2022 C4D5** (Acceptable methods of Protection) **BCA2022 C4D6** (Doors in Fire Walls) **BCA2022 C4D9** (Openings in Fire Isolated Exits) **BCA2022 C4D12** (Bounding Construction) **Specification 19** (Fire Control Centres) **Specification 12 &** AS1905.1: 2015 **BCA2022 C4D11** (Opening in Fire Isolated Lift Shafts) & AS1735.11- 1986
4.	Fire seals protecting openings in fire resisting components of the building	**BCA2022 C4D15** (Openings for service installations) **BCA2022 Specification 13** AS1530.4:2014 & AS4072.1-2005
5.	Lightweight construction	**BCA2022 C2D2, Specification 5** **BCA2022 C2D9, Specification 6** **BCA2022 C4D12** (Bounding Construction) AS1530.4:2014
6.	Smoke Walls	**BCA2022 C3D15** (Public Corridors Class 2/3) **BCA2022 D3D5 (**Separation of Rising and Descending Stair Flights) Clause S11C2
7.	Smoke Doors	**BCA2022 C3D15** (Public Corridors Class 2/3) **BCA2022 D3D5** (Separation of Rising and Descending Stair Flights) **BCA2022 Specification 12**
General		
8.	Fire control centres & rooms	**BCA2022 E1D15** **Specification 19** (Fire Control Room)

Item	Essential Fire and Other Safety Measures	Standard of Performance
9.	Portable fire extinguishers	**BCA2022 E1D14** AS 2444–2001
10.	Warning & operational signs	**BCA2022 D3D28** (Signs on Fire Doors) **BCA2022 D4D7** (Braille Exit Signs) **BCA2022 E3D4** (Lift Signs) **BCA2022 Specification 19** (Fire Control Room)
Lifts		
11.	Emergency lifts Lift No XX Lift No XX	**BCA2022 E3D5**
12.	Stretcher Lifts including Fire Service Controls Recall Operation Drive control switch	**BCA2022 E3D3** **BCA2022 E3D9** (Fire Service Controls) **BCA2022 E3D11** (Fire Service Recall Operation Switch) **BCA2022 E3D12** (Lift Car Fire Service drive control switch) **BCA2022 Specification 24**
Electrical Services		
13.	Automatic fail-safe devices Auto open Sliding Exit doors Break Glass release	**BCA2022 D3D26** (Operation of Latches) **BCA2022 D3D27** (Re-entry from fire-isolated stairs) AS1670.1:2018 (Fire)
14.	Automatic fire detection & alarm:	**BCA2022 E2D3, E2D5** **BCA2022 S20C3** (Smoke alarm system) **BCA2022 S20C6** (Smoke detection for smoke control systems) AS 3786:2014 (Amdt 1-4) AS 1670.1:2018 (Amdt 1) AS 1670.3:2018 (Amdt 1)
15.	Emergency lighting	**BCA2022 E4D2, E4D4** AS/NZS 2293.1:2018
16.	Exit signs	**BCA2022 E4D5, E4D6**, **E4D8** AS/NZS 2293.1:2018
17.	Emergency warning and intercom systems	**BCA2022 E4D9** AS 1670.4:2018 (Amdt 1)
18.	System Monitoring	**BCA2022 Spec 17** AS 1670.3:2018 (Amdt 1) Monitoring Required for AS2118.1 Sprinkler System
Hydraulic Services		
19.	Automatic fire suppression systems General Sprinklers	**BCA2022 E1D4, E1D5** **BCA2022 Specification 17** AS 2118.1:2017 (Sprinklers)

Item	Essential Fire and Other Safety Measures	Standard of Performance
		AS 2118.6:2012 (Combined Sprinklers/Hydrant)
20.	Fire hydrant systems NSW Storz Couplings	**BCA2022 E1D2** AS 2419.1:2021 FRNSW Technical Sheet D15/45534.V9 issued 10.01.19, 'Compatible Hose Connections'
21.	Hose reel systems	**BCA2022 E1D3** AS 2441:2005
22.	Wall-wetting sprinkler / drenchers	**BCA2022 C4D4, C4D5** AS 2118.1:2017
Mechanical Services		
23.	Fire dampers	**BCA2022 C4D16** AS 1668.1:2015 (Amdt 1), AS 1682.1:2015 & AS 1682.2:2015
24.	Mechanical ventilation to carpark.	**BCA2022 E2D12** AS 1668.1:2015 (Amdt 1)
25.	Fire Isolated Exit Pressurisation Systems	**BCA2022 E2D4** AS 1668.1:2015 (Amdt 1)
26.	Zone Pressurisation System	**Omit via Performance Solution**

Appendix C Fire resistance levels

The following fire resistance levels (FRL's) are required for the various building elements, with a fire source feature being the far boundary of a road adjoining the allotment, a side or rear boundary or an external wall of another building on the allotment except a Class 10 structure.

Type A construction

Table 4 Type A construction

Table S5C11a: Type A construction: FRL of loadbearing parts of external walls

Distance from a fire-source feature	FRL (in minutes): Structural adequacy / Integrity / Insulation			
	Class 2, 3 or 4 Part	Class 5, 7a or 9	Class 6	Class 7b or 8
Less than 1.5 m	90/90/90	120/120/120	180/180/180	240/240/240
1.5 to less than 3 m	90/60/60	120/90/90	180/180/180	240/240/180
3m, or more	90/60/30	120/60/30	180/120/90	240/180/90

Table S5C11b: Type A construction: FRL of non-loadbearing parts of external walls

Distance from a fire-source feature	FRL (in minutes): Structural adequacy / Integrity / Insulation			
	Class 2, 3 or 4 Part	Class 5, 7a or 9	Class 6	Class 7b or 8
Less than 1.5 m	-/90/90	-/120/120	-/180/180	-/240/240
1.5 to less than 3 m	-/60/60	-/90/90	-/180/120	-/240/180
3m, or more	-/-/-	-/-/-	-/-/-	-/-/-

Table S5C11c: Type A construction: FRL of external columns not incorporated in an external wall.

Column Type	FRL (in minutes): Structural adequacy / Integrity / Insulation			
	Class 2, 3 or 4 Part	Class 5, 7a or 9	Class 6	Class 7b or 8
Loadbearing	90/-/-	120/-/-	180/-/-	240/-/-
Non-loadbearing	-/-/-	-/-/-	-/-/-	-/-/-

Table S5C11d: Type A construction: FRL of common walls and fire walls

Wall Type	FRL (in minutes): Structural adequacy / Integrity / Insulation			
	Class 2, 3 or 4 Part	Class 5, 7a or 9	Class 6	Class 7b or 8
Loadbearing or non-bearing	90/90/90	120/120/120	180/180/180	240/240/240

Table S5C11e: Type A construction: FRL of loadbearing internal walls

Location	FRL (in minutes): Structural adequacy / Integrity / Insulation			
	Class 2, 3 or 4 Part	Class 5, 7a or 9	Class 6	Class 7b or 8
Fire-resisting lift and stair shafts	90/90/90	120/120/120	180/120/120	240/120/120
Bounding public corridors, public lobbies and the like	90/90/90	120/-/-	180/-/-	240/-/-
Between or bounding sole-occupancy unit	90/90/90	120/-/-	180/-/-	240/-/-
Ventilating, pipe, garbage, and like shafts not used for the discharge of hot products of combustion	90/90/90	120/90/90	180/120/120	240/120/120

Table S5C11f: Type A construction: FRL of non-loadbearing internal walls

Location	FRL (in minutes): Structural adequacy / Integrity / Insulation			
	Class 2, 3 or 4 Part	Class 5, 7a or 9	Class 6	Class 7b or 8
Fire-resisting lift and stair shafts	-/90/90	-/120/120	-/120/120	-/120/120
Bounding public corridors, public lobbies and the like	-/60/60	-/-/-	-/-/-	-/-/-
Between or bounding sole-occupancy unit	-/60/60	-/-/-	-/-/-	-/-/-
Ventilating, pipe, garbage, and like shafts not used for the discharge of hot products of combustion	-/90/90	-/90/90	-/120/120	-/120/120

Table S5C11g: Table A construction: FRL of other building elements not covered by Tables S5C11a to S5C11f

Building Element	FRL (in minutes): Structural adequacy / Integrity / Insulation			
	Class 2, 3 or 4 Part	Class 5, 7a or 9	Class 6	Class 7b or 8
Other loadbearing internal walls, internal beams, trusses and columns	90/-/-	120/-/-	180/-/-	240/-/-
Floors	90/90/90	120/120/120	180/180/180	240/240/240
Roofs	90/60/30	120/60/30	180/60/30	240/90/60

N.B. There are FRL concessions applicable for fully sprinkler building under Clause S5C15 of BCA Specification 5, permitting the roof of the building to have nil FRL.

Appendix D Definitions

Average specific extinction area

Average specific extinction area means the average specific extinction area for smoke as determined by AS 5637.1:2015.

Critical radiant flux

Critical radiant flux (CRF) means the critical heat flux at extinguishment (CHF in kW/m2) as determined by AS ISO 9239.1:2003.

Designated bushfire prone area

Designated bushfire prone area means land which has been designated under a power of legislation as being subject, or likely to be subject, to bushfires.

Effective height

Effective height means the vertical distance between the floor of the lowest storey included in a determination of rise in storeys and the floor of the topmost storey (excluding the topmost storey if it contains only heating, ventilating, lift or other equipment, water tanks or similar service units).

Envelope

Envelope, for the purposes of Section J in Volume One, means the parts of a building's fabric that separate a conditioned space or habitable room from—

1. the exterior of the building; or
2. a non-conditioned space including—
    a. the floor of a rooftop plant room, lift-machine room or the like; and
    b. the floor above a carpark or warehouse; and
    c. the common wall with a carpark, warehouse or the like.

Exit

Exit means –

1. Any, or any combination of the following if they provide egress to a road or open space—
    a. An internal or external stairway.
    b. A ramp.
    c. A fire-isolated passageway.
    d. A doorway opening to a road or open space.
    e. A horizontal exit or a fire-isolated passageway leading to a horizontal exit.

Fire compartment

Fire compartment means –

1. the total space of a building; or

2. when referred to in—

    a. the Performance Requirements — any part of a building separated from the remainder by barriers to fire such as walls and/or floors having an appropriate resistance to the spread of fire with any openings adequately protected; or

    b. the Deemed-to-Satisfy Provisions — any part of a building separated from the remainder by walls and/or floors each having an FRL not less than that required for a fire wall for that type of construction and where all openings in the separating construction are protected in accordance with the Deemed-to-Satisfy Provisions of the relevant Part.

Fire-resistance level (FRL)

Fire-resistance level (FRL) means the grading periods in minutes determined in accordance with Specification A2.3, for the following criteria—

1. structural adequacy; and
2. integrity; and
3. insulation,

and expressed in that order.

Note: A dash means that there is no requirement for that criterion. For example, 90/–/– means there is no requirement for an FRL for integrity and insulation, and –/–/– means there is no requirement for an FRL.

Fire-source feature

1. the far boundary of a road, river, lake or the like adjoining the allotment; or
2. a side or rear boundary of the allotment; or
3. an external wall of another building on the allotment which is not a Class 10 building.

Fire wall

Fire wall means a wall with an appropriate resistance to the spread of fire that divides a storey or building into fire compartments.

Flammability index

Flammability Index means the index number as determined by AS 1530.2:1993.

Group number

Group number means the number of one of 4 groups of materials used in the regulation of fire hazard properties and applied to materials used as a finish, surface, lining, or attachment to a wall or ceiling.

Horizontal exit

Horizontal exit means a required doorway between 2 parts of a building separated from each other by a fire wall.

Loadbearing

Intended to resist vertical forces additional to those due to its own weight.

Non-combustible

Non-combustible means—

1. applied to a material — not deemed combustible as determined by AS 1530.1:1994 — Combustibility Tests for Materials; and
2. applied to construction or part of a building — constructed wholly of materials that are not deemed combustible.

Occupiable outdoor area

Occupiable outdoor area means a space on a roof, balcony or similar part of a building–

1. that is open to the sky; and
2. to which access is provided, other than access only for maintenance; and
3. that is not open space or directly connected with open space.

Open space

Open space means a space on the allotment, or a roof or similar part of a building adequately protected from fire, open to the sky and connected directly with a public road.

Performance Requirement

Performance Requirement means a requirement which states the level of performance which a Performance Solution or Deemed-to-Satisfy Solution must meet.

Performance Solution

Performance Solution means a method of complying with the Performance Requirements other than by a Deemed-to-Satisfy Solution.

Sarking-type material

Sarking-type material means a material such as a reflective insulation or other flexible membrane of a type normally used for a purpose such as waterproofing, vapour management or thermal reflectance.

Smoke developed index.

Smoke developed index means the index number for smoke as determined by AS/NZS 1530.3.

Smoke development rate

Smoke development rate means the development rate for smoke as determined by testing flooring materials in accordance with AS ISO 9239.1.

Smoke growth rate index

Smoke growth rate index (SMOGRA RC) means the index number for smoke used in the regulation of fire hazard properties and applied to materials used as a finish, surface, lining or attachment to a wall or ceiling.

Sole-occupancy unit

Sole-occupancy unit means a room or other part of a building for occupation by one or joint owner, lessee, tenant, or other occupier to the exclusion of any other owner, lessee, tenant, or other occupier and includes—

1. a dwelling; or
2. a room or suite of rooms in a Class 3 building which includes sleeping facilities; or
3. a room or suite of associated rooms in a Class 5, 6, 7, 8 or 9 building; or
4. a room or suite of associated rooms in a Class 9c building, which includes sleeping facilities and any area for the exclusive use of a resident.

Appendix E BCA compliance specification

The following BCA matters are to be addressed by specific BCA Design Certificate to be issued by the relevant architectural, services and engineering consultants at the Construction Certificate Stage. This schedule should be forwarded to all consultants to obtain verification that these items have and will be included in the design documentation / specifications:

Architectural Design Certification

1. The FRL's of building elements for the proposed works have been designed in accordance with S5C11 of Specification 5 of BCA2022 for a building of Type A Construction.
2. Lightweight construction used to achieve required fire resistance levels will comply with Specification 6 of BCA2022.
3. Building elements, including external walls and their components in buildings of Type A and B Construction, must be non-combustible in accordance with C2D10 of BCA2022.
4. Materials, floor and wall linings/coverings, surface finishes and air-handling ductwork used in the works will comply with the fire hazard properties of Clause C2D11 and Specification 7 of BCA2022.
5. Any ancillary elements fixed, installed, or attached to the internal parts or external face of an external wall that is required to be non-combustible will comply with Clause C2D14 of BCA2022.
6. The parts of different classifications located alongside one another in the same storey will be separated in accordance with Clause C3D9 and Specification 5 of BCA2022.
7. Floors separating storeys of different classifications will comply with BCA Clause C3D10 of BCA2022.
8. Equipment will be separated in accordance with Clause C3D13 of BCA2022.
9. Any electricity substation, and any main switch room sustaining emergency equipment required to operate in emergency mode, will be separated from the remaining building with construction having an FRL 120/120/120 and provided with self-closing -/120/130 fire doors in accordance with Clause C3D14 of BCA2022.
10. Openings in the external walls that are required to have an FRL will be in located in accordance with Clause C4D3 and C4D4 of BCA2022 or protected in accordance with Clause C4D5 of BCA2022.
11. Doorways in any fire walls separating fire compartments will be protected in accordance with Clause C4D6 of BCA2022.
12. Doors in a fire-isolated exit will be self-closing or automatic closing fire doors with an FRL of not less than -/60/30 in accordance with Clause C4D9 of BCA2022.
13. Fire-isolated stairways will not be penetrated by services other than those permitted by Clause C4D10 of BCA2022.
14. Services penetrating elements required to possess an FRL including the floor slabs, walls, shafts, etc. will be protected in accordance with Clause C4D13, C4D14 and C4D15 and Specification 13 of BCA2022.
15. Construction joints, spaces and the like in and between building elements required to be fire-resisting with respect to integrity and insulation will be protected in accordance with BCA Clause C4D16.
16. The lift doors will be -/60/- fire doors complying with AS 1735.11:1986 in accordance Clause C4D11 of BCA2022.

17. Doorways and other opening in internal walls required to have an FRL will be protected in accordance with Clause C4D12 of BCA2022.
18. A lintel will have the FRL required for the part of the building in which it is situated, unless it does not contribute to the support of a fire door, fire window or fire shutter, and it spans an opening in masonry which is not more than 150 mm thick and is not more than 3m wide if the masonry is non- loadbearing; or not more than 1.8m wide if the masonry is loadbearing and part of a solid wall or one of the leaves of a cavity wall, or it spans an opening in a non-loadbearing wall of the Class 2 or 3 building, in accordance with Specification 5 Clause S5C4 BCA2022.
19. The top and bottom of the riser shafts will achieve an FRL not less than the FRL required for the walls of the shaft in accordance with Clause S5C8 of Specification 5 of BCA2022.
20. Fire doors will comply with AS 1905.1:2015 and Specification C4D5 of BCA2022.
21. Smoke doors will be installed in accordance with Specification 12 of BCA2022.
22. The number of exits provided to the building will be in accordance with Clause D2D3 of BCA2022.
23. The required exits will be fire-isolated in accordance with Clause D2D4 of BCA2022.
24. Travel distances to exits will be in accordance with Clause D2D5 of BCA2022.
25. The alternative exits will be distributed uniformly around the storey and will be not be less than 9m apart, and not more that 45m apart in any residential portions or patient care areas in the health-care building, or otherwise not more than 60m apart, in accordance with Clause D2D6 of BCA2022.
26. The dimensions of exits and paths of travel to exits will be provided in accordance with Clause D2D7 to D2D11 of BCA2022.
27. The fire-isolated exits will be in accordance with Clause D2D12 of BCA2022.
28. Discharge from exits will be in accordance with Clause D2D15 of BCA2022.
29. The ladder from the plant, lift machine rooms, and electricity network substation in lieu of a stairway will be in accordance with Clause D2D21 of BCA2022.
30. Access to the lift pit will be in accordance with Clause D2D22 of BCA2022.
31. The stairway or ramp within the fire-isolated shaft is to be non-combustible, and if there is a local failure not cause structural damage or impair the fire resistance of the shaft, in accordance with Clause D3D3 of BCA2022.
32. The construction separating rising and descending stairs in the fire-isolated exit stairway will be non-combustible and smoke proof, in accordance with Clause D3D5 of BCA2022.
33. The construction of EDB’s and telecommunications distribution boards will be in accordance with Clause D3D8 of BCA2022 with the enclosure bounded by non-combustible construction or fire protective covering and smoke seals provided around the perimeter of the non-combustible doors and any openings sealed with non-combustible mastic to prevent smoke spreading from the enclosure.
34. New pedestrian ramps will comply with AS 1428.1:2009, Clause D3D11 and Part D4 of BCA2022. The floor surface of a ramp must have a slip-resistance classification complying with Table D3D15 when tested in accordance with AS 4586:2013.
35. The fire-isolated passageway will be in accordance with Clause D3D12 of BCA2022.
36. The roof of the building where the exit discharges will have an FRL of 120/120/120 and will not have roof lights or openings within 3m of the path of travel in accordance with Clause D3D13 of BCA2022.

37. Stair geometry to the new stairways will be in accordance with Clause D3D14 of BCA2022. Stair treads are to have a surface with a slip-resistance classification complying with Table D3D15 when tested in accordance with AS 4586:2013.
38. Landings and door thresholds throughout the development will be provided in accordance with Clause D3D15 and D3D16 of BCA2022. Landings to have either a surface with a slip-resistance classification complying with Table D3D15 when tested in accordance with AS 4586:2013 or a strip at the edge of the landing with a slip-resistance classification complying with Table D3D15 when tested in accordance with AS 4586:2013 where the edge ledge to a flight below.
39. The handrails and balustrades to all stairs and throughout the building will be in accordance with Clause D3D17 to D3D21, and D3D22 of BCA2022.
40. The fixed platform, walkway, stairway and ladder and any associated going and riser, landing handrail, balustrade, located within the machinery room, boiler house, lift-machine room, plantroom, or non-habitable attic/storeroom within the sole occupancy unit will comply with AS 1657:2018 or Part D3 of BCA2022.
41. The doorways and doors will be in accordance with Clause D3D24 and D3D25 of BCA2022.
42. Door latching mechanisms will be in accordance with Clause D3D26 of BCA2022.
43. Re-entry doors from the fire-isolated exits will be in accordance with Clause D3D27 of BCA2022.
44. Signage will be provided on fire and smoke doors in accordance with Clause D3D28 of BCA2022.
45. The openable portion of a window in a bedroom of a Class 2 building will be protected with a restricting device or secure screen that does not allow a 125mm sphere to pass through the opening or screen and resist an outward horizontal action of 250N in accordance with Clause D3D29 of BCA2022. In addition to window protection, and for other openable windows 4 meters or more above the ground below, a barrier with a height not less than 865mm above the floor will be installed to the openable window.
46. The fire control room will be in accordance with Clause E1D15 and Specification 19 of BCA2022.
47. Fire precautions whilst the building is under construction will be in accordance with Clause E1D16 of BCA2022.
48. External above ground waterproofing membranes will comply with Clause F1D5 of BCA2022 and AS 4654 Parts 1 & 2:2012.
49. The new roof covering will be in accordance with Clause F3D2 of BCA2022.
50. Any sarking proposed will be installed in accordance with Clause F3D3 of BCA2022.
51. Waterproofing of all wet areas to the building will be carried out in accordance with Clause F2D2 and F2D3 of BCA2022 and AS 3740:2010.
52. Damp proofing of the proposed structure will be carried out in accordance with Clause F1D6 and F1D7 of BCA2022.
53. Floor wastes, including falls to floor wastes (including any voluntarily proposed floor wastes), will be installed in accordance with Clause F2D4 of BCA2022.
54. All new glazing to be installed throughout the development will be in accordance with Clause F3D4 of BCA2022 and AS 1288:2006 / AS 2047:2014.
55. Sanitary facilities will be provided in the building in accordance with Clause F4D2 & Clause F4D4 of BCA2022.
56. The construction of the sanitary facilities will be in accordance with Clause F4D8 of BCA2022.

57. Ceiling heights will be in accordance with Clause F5D2 of BCA2022.
58. Natural light will be provided in accordance with Clause F6D2, F6D3, and F6D4 of BCA2022.
59. Natural or mechanical ventilation will be provided in accordance with Clause F6D6, F6D7 and F6D8 of BCA2022.
60. Water closets and urinals will be located in accordance with Clause F6D9 of BCA2022.
61. The sanitary compartments will be either be provided with mechanical exhaust ventilation or an airlock in accordance with Clause F6D10 of BCA2022.
62. Pliable building membranes installed in external walls will comply with Clause F8D3 of BCA2022 and where a pliable building membrane is not installed in an external wall, the primary water control layer will be separated from water sensitive materials by a drained cavity.
63. A safe manner for cleaning of windows located 3 or more storeys above ground level will be provided in accordance with the Work Health & Safety Act 2011 and regulations made under that Act in accordance with NSW G1D5 of BCA2022.
64. The construction of the residential portions of the development will be undertaken in accordance with the relevant BASIX commitments that form part of the Development Consent approval.

Electrical Services Design Certification:

65. A smoke detection and alarm system will be installed throughout the building in accordance with E2D4 to E2D13, and Specification 20 of BCA2022.
66. Emergency lighting will be installed throughout the development in accordance with Clause E4D2, E4D4 of BCA2022 and AS/NZS 2293.1:2018.
67. Exit signage will be installed in accordance with Clause E4D5, E4D7, and E4D8 of BCA2022 and AS/NZS 2293.1:2018.
68. An emergency warning and intercom system (EWIS) will be provided to the building in accordance with Clause E4D9 of BCA2022.
69. Artificial lighting will be installed throughout the development in accordance Clause F6D5 of BCA2022 and AS/NZS 1680.0:2009.
70. Lighting power and controls will be installed in accordance with Part J7 of BCA2022.
71. Electrical conductors located within the building that supply a main switchboard that sustains emergency equipment will comply with Clause C3D14 of BCA2022.

Hydraulic Services Design Certification:

72. Storm water drainage will be provided in accordance with Clause F1D3 of BCA2022 and AS/NZS 3500.3:2018
73. Fire hydrant system will be installed in accordance with Clause E1D2 of BCA2022 and AS 2419.1:2021.
74. Fire hose reels will be installed in accordance with Clause E1D3 of BCA2022 and AS 2441:2005.
75. A sprinkler system will be installed in accordance with Clause E1D4 of BCA2022 Specification 17 and appropriate part(s) of AS 2118.
76. Portable fire extinguishers will be installed in accordance with Clause E1D14 of BCA2022 and AS 2444:2001.

77. The heated water supply systems will be designed and installed to NCC Volume 3 – Plumbing code and Clause J8D2 of BCA2022.

Mechanical Services Design Certification:

78. An air-handling system which does not form part of a smoke hazard management system will be installed in accordance with Clause E2D3 of BCA2022 and AS 1668.1:2015.
79. Stair pressurisation will be installed in the building in accordance with E2D4 to E2D13 of BCA2022 and AS 1668.1:2015.
80. Where not naturally ventilated the building will be mechanically ventilated in accordance with Clause F6D6 of BCA2022 and AS 1668.2:2012.
81. Every storey of the car park will be ventilated in accordance with Clause F6D11 of BCA2022 and where not naturally ventilated it will be mechanically ventilated in accordance with AS 1668.2:2012 as applicable.
82. The commercial kitchen will be provided with a kitchen exhaust hood in accordance with Clause F6D12 of BCA2022, and AS 1668.1:2015 and AS 1668.2:2012.
83. Exhaust systems installed in a kitchen, bathroom, sanitary compartment, or laundry of a Class 2 or 4 sole-occupancy unit will have a minimum flow rate and discharge location in accordance with Clause F8D4 of BCA2022.
84. Rigid and flexible ductwork will comply with the fire hazard properties set out in AS 4254 Parts 1 and 2.

Structural Engineers Design Certification:

85. The material and forms of construction for the proposed works will be in accordance with Clause B1D3, B1D4 and B1D6 of BCA2022 as follows:
    a. Dead and Live Loads – AS/NZS 1170.1:2002
    b. Wind Loads – AS/NZS 1170.2:2011
    c. Earthquake actions – AS 1170.4:2007
    d. Masonry – AS 3700:2018
    e. Concrete Construction – AS 3600:2018
    f. Steel Construction AS 4100:2020
    g. Aluminium Construction – AS/NZS 1664.1 or 2:1997
    h. Timber Construction – AS 1720.1:2010
    i. ABCB Standard for Construction of Buildings in Flood Hazard Areas.
86. The FRL’s of the structural elements for the proposed works have been designed in accordance with Specification 5 of BCA2022, including S5C11 for a building of Type A Construction.
87. The lift shaft will have an FRL in accordance with Clause C3D11 and Specification 5 of BCA2022.
88. Lightweight construction used to achieve required fire resistance levels will comply with Specification 6 of BCA2022.
89. The construction joints to the structure will be in accordance with Clause C4D16 of BCA2022 to reinstate the FRL of the element concerned.

90. Upon completion of the works, a structural engineer will be able to certify that local failure will be in accordance with Clause D3D3 of BCA2022 for the fire isolated stairs.

Lift Services Design Certification:

91. The lifts throughout the development will be provided with stretcher facilities in accordance with Clause E3D3 of BCA2022 and will be capable of accommodating a stretcher with a patient lying horizontally by providing a clear space not less than 600mm wide x 2000mm long x 1400mm high above the floor level.
92. Warning signage in accordance with Clause E3D4 of BCA2022 will be provided to the lifts to advise not to use the lifts in a fire.
93. An emergency lift will be provided in the building in accordance with Clause E3D5 of BCA2022.
94. A fire service recall control switch is to be installed on a landing at a location nominated by the appropriate authority in accordance with Clause E3D11.
95. A lift car fire service drive control switch is to be installed within the lift car in accordance with Clause E3D12.
96. Access and egress to the lift well landings will comply with the Deemed-to-Satisfy Provisions of D4 of the BCA2022 and will be suitable to accommodate disabled persons.
97. The type of lifts will also be suitable to accommodate persons with a disability in accordance with Clause E3D7 and E3D8 and will also have accessible features in accordance with E3D7 and E3D8 of BCA2022.
98. The lifts will comply with AS 1735.12:1999 in accordance with Clause E3D7 and E3D8 of BCA2022.
99. All electric passenger lifts and electrohydraulic passenger lifts shall comply with Specification 24 of BCA2022.

Acoustic Services Design Certification:

100. The sound transmission and insulation of the residential portions of the development will comply with Part F7 of BCA2022.

NSW Specification Design Certificate:

101. The swimming pool associated with the new building will comply with Clause G1D2 and NSW G1D2 of the BCA, Swimming Pools Act 1992, Swimming Pools Regulation 2018 and AS 1926.1:2012. AS 1926.2:2007 and AS 1926.3:2010.